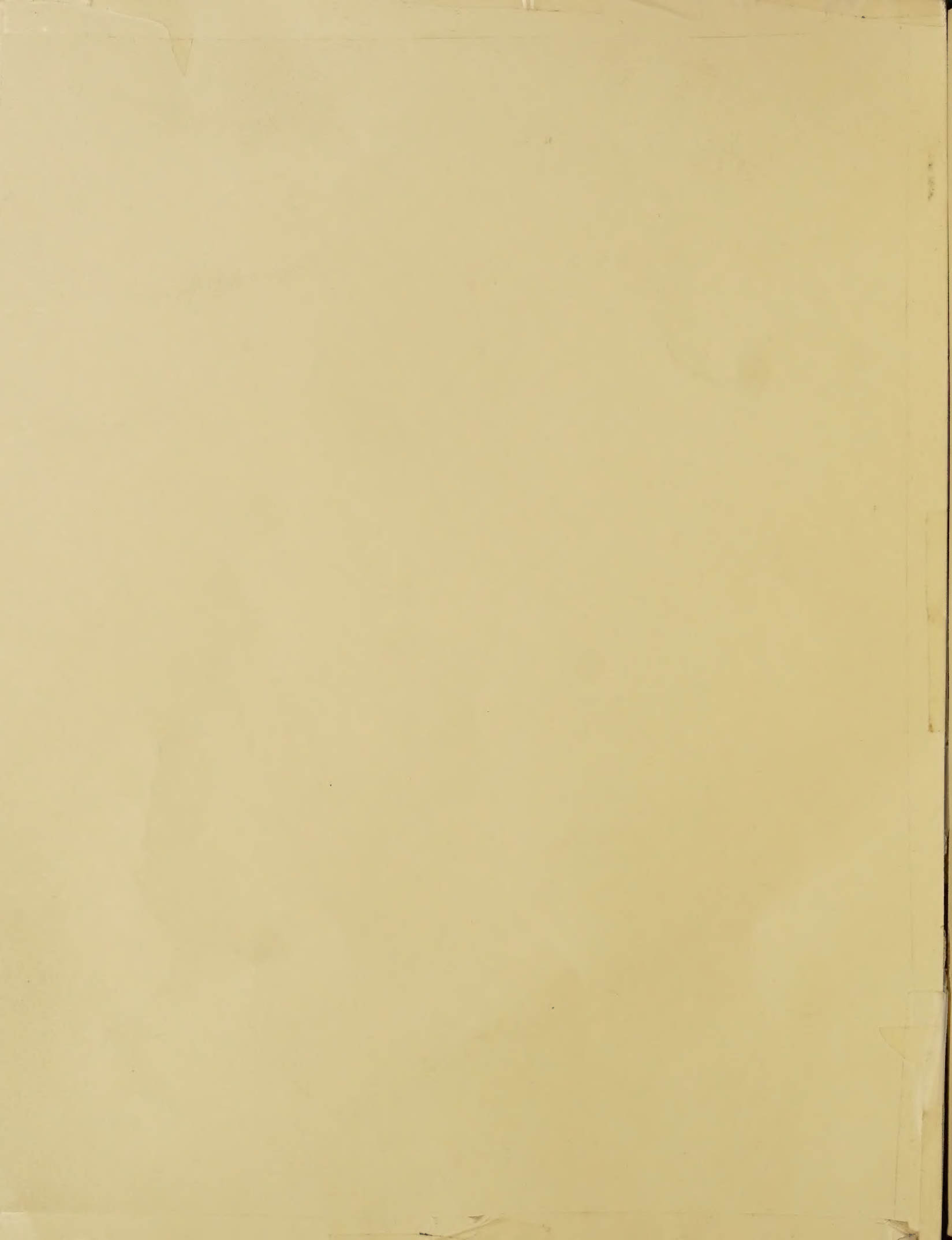


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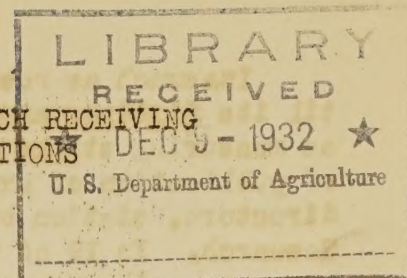
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REPORT OF PROGRESS IN HOME ECONOMICS RESEARCH RECEIVING
FEDERAL SUPPORT AT LAND-GRANT INSTITUTIONS
1931-32

Sybil L. Smith



This year, partly as the result of the necessity of practicing rigid economy even in paper and partly as a means of calling especial attention to new projects, I have included in my compilation of active projects receiving Federal support at Land-Grant institutions only those projects which have been initiated or revised since November 1, 1931. The list thus supplements rather than supersedes last year's list of active projects.

Following the practice begun a year ago, I have added to the list of projects receiving Purnell support the titles of such other home economics research projects (whatever their financial support) as have been sent me by the administrative heads of home economics departments. This list is probably not as complete or as accurate as the list of Federally-supported projects, as the information was in many cases incomplete.

For obvious reasons it seemed best this year to make no mention of financial support. Salary changes and adjustments occasioned by the depression may make the original allotments subject to change. There has as yet been no reduction in Federal appropriations for research at the experiment stations, but reductions in State funds have necessitated the spreading out of Federal funds. As far as could be judged by altered allotments given in the programs of work of the experiment stations, as submitted to the Office of Experiment Stations at the beginning of the fiscal year, the reductions in appropriations to home economics research can for the most part be accounted for by lower salary scales. There has been very little expansion, however, as may be seen by the summary of changes in the research program.

SUMMARY OF PROJECTS.

The records show a total of 33 projects discontinued or completed during the year of which 19 were in foods and nutrition, 7 in family economics, 3 the house, 3 textiles and clothing, and 1 family relationships. The new projects total 27 of which 20 are in foods and nutrition, 5 in family economics, and 2 in textiles and clothing. Old, revised, and new projects total 99 in foods and nutrition, 23 in family economics, 19 in the house, and 8 in textiles and clothing, making a grand total of 149 projects receiving Federal support. Although I have not attempted to classify the projects receiving other financial support, the titles indicate that they fall in about the same proportion among the various subject-matter groups with, in addition, some projects in family relationships.

SUMMARY OF PUBLISHED REPORTS.

In the list of published reports I have included only reports of research receiving Federal funds at Land-Grant institutions. I would be glad of your reactions as to the value of expanding this list another year to include reports of research receiving other than Federal support. To do this I will have to have your active cooperation in the form of reprints and lists of publications.

1/ Presented before the Home Economics Section of the Association of Land-Grant Colleges and Universities, at the Washington meeting, November 16, 1932.

Inasmuch as research, however valuable in itself, serves no purpose until its findings are made known, the yearly lists of published reports serve as measuring sticks of value received for money spent. The official channels of publication of experiment station research are the annual reports of the directors, station bulletins and circulars, and the Journal of Agricultural Research. In 19 of the 42 States in which some Federal funds are allotted to home economics research, the only published reports of the year have been the brief progress reports which I have listed without titles or authors, since for the most part these reports cover progress in all active projects. The other official station publications listed include 2 press reports, 3 progress or summary reports in bimonthly station bulletins, 1 circular, and 15 bulletins. I have also included 2 extension bulletins by research workers. Since experiment station bulletins undoubtedly offer the best opportunity for complete detailed treatment of the findings in any research project, it is of interest to note the distribution of the 15 bulletins among the different subject matter fields--8 in foods and nutrition, 5 family economics, and 2 in textiles and clothing.

The journal articles, as usual, are chiefly in foods and nutrition and require no comment beyond calling attention to the fact that acceptance of papers by such journals as the Journal of Biological Chemistry, Journal of Nutrition, American Journal of Physiology, and Journal of Dental Research show that the best journals dealing with nutrition are open to home economics research workers. The list of publications does not represent all of the completed reports for the year, for in a number of instances journal articles were reported as being in press. With uncertainty as to the titles and references of these articles and their date of publication, it seemed best not to include them in the list.

REVIEW OF PUBLISHED REPORTS.

In this year of economy when expenditures for any purpose are scrutinized more carefully than usual, it seems appropriate to recall the purpose of the Purnell Act and review the contributions of the year in home economics research which may be said to meet the obligations imposed upon any department receiving funds made available under this Act. You will recall that the entering wedge of home economics into experiment station research under Purnell funds was the phrase in the Purnell Act "the development and improvement of the rural home and rural life." I have gone over the published reports of the year quite carefully and have attempted to summarize briefly some of the findings which seem to me to make a definite contribution to the improvement of the rural home in regard to the nutrition of the various age groups in the family, the food of the family, the house in which the home life centers, and the standards of living of rural families in different sections of the country. As source material I have used only the list of published reports for the year, for I would like to emphasize again that research is of practical value only to the extent that its findings are made known.

The Nutrition of the Farm Family.

An important factor in the improvement of the rural home is the provision for optimal nutrition for every member of the family, but knowledge is not yet complete as to what are the dietary requirements for normal nutrition at all ages and how dietary habits conform to accepted standards.

Iron requirements.--A series of iron balance experiments on women in different stages of pregnancy reported from Oklahoma showed that iron is stored to a greater extent in the early than the later months of pregnancy.

that the extent of storage depends largely upon the type of food--green vegetables, liver, and meat ranking high in this respect--and that under fairly ideal conditions of general health and freedom from digestive disturbances careful diet selection will insure a sufficient storage of iron to furnish the needed reserves for the new-born child.

From Minnesota has come a contribution on the iron requirements of young children. From results obtained in iron metabolism experiments conducted on three children from 35 to 56 months of age, the recommendation is made of an allowance of 0.48 mg. of iron per kilogram of body weight in planning dietaries for preschool children.

The Mississippi Station has reported that many of the common vegetables of the South have antianemic potency, as determined by curative experiments on rats rendered anemic on a milk diet, and that these vegetables are presumably practical sources of iron in the diet. The vegetables tested included mustard and turnip tops, collards, and green cowpeas--all vegetables easy to raise in the home gardens of the South or inexpensive to purchase. The cowpeas or field peas proved particularly high in antianemic potency.

Food consumption of preschool children.--At Ohio and Michigan timely studies are under way on the quantitative food requirements of preschool children. Such studies would have been impossible to carry out except in institutions in the days before the establishment of nursery schools. These have sold the idea of research to parents to the extent that they are willing and eager to give the cooperation required in carrying on quantitative dietary studies and metabolism experiments with little children as subjects. A progress report from Ohio states that in a quantitative food intake study conducted on a small group of preschool children during two periods of a week each in the months of January and March the intake of essential constituents was found to approximate the commonly accepted standards with the possible exception of vitamin B, but that the distribution of calories derived from fat, sugar, eggs, and meat was much higher and from milk somewhat lower than customary standards. The relative ease with which an increased consumption of milk can be brought about in children of this age was shown by the higher average consumption of this valuable food in the later than in the earlier study.

In a similar study at Michigan of a larger group of children between the ages of 2-1/2 and 5 years, the total food intake and the intake of protein, calcium, and phosphorus were found to be higher than the customary standards. The results obtained in metabolism studies conducted on three of these children on diets low, medium, and high in nitrogen and phosphorus indicated that a protein intake of between 3 and 4 gm. per kilogram of body weight is optimal as regards protein retention in children of this age.

Supplementary school lunches.--Observations at the Massachusetts Station of improvement in the general well-being of children receiving tomato juice or evaporated milk in midmorning school lunches suggest practical substitutes for fresh milk in localities where the latter is difficult to secure.

Dietary habits of college students.--When boys and girls leave home to attend the State college or university they are often thrown on their own resources for the first time in the selection of their diet. This is especially true in institutions where the meals are served cafeteria fashion, or where the students live in sorority or fraternity houses and plan their own meals. That freedom of choice of food by the college student does not always lead to the best diet has been shown in several studies.

Observations of food selection in the cafeteria service at the North Dakota Agricultural College have shown a tendency toward the selection of diets inadequate in calories and in essential food constituents. Analyses at the Oklahoma Station of the self chosen diets of a number of young women students at Oklahoma A. and M. College showed the diets to be so inadequate as to suggest that the low metabolism noted in a previous report may have been the result of prolonged undernutrition. One particularly inadequate diet was cited as representing the diet of a sorority group among whom in the course of a year one case of pellagra, two of tuberculosis, and a number of cases of marked undernutrition has been discovered.

Even well-planned meals fail of their purpose of furnishing optimal diets to college students if through eating between meals justice is not done to the regular meals. A special study at the New Hampshire Station of the energy and protein content of edible waste from meals at sorority and fraternity houses at the University of New Hampshire revealed excessive waste of well-prepared and well-served food, suggesting the consumption away from the table of extra foods furnishing no small part of the total energy intake. Unfortunately, the type of food usually eaten between meals is apt to contribute more to the total calories than to the mineral or vitamin content of the diet which may as a consequence fall below the accepted standards for adequacy.

Metabolism of older women.---Even old age is receiving attention in home economics research, for the Ohio program includes a study of the basal metabolism of older women. The first progress report is given this year in tabulated data on the average basal metabolism of 17 women from 35 to 40 years of age, 23 from 40 to 50, 8 from 50 to 60, and 2 from 60 to 70 years of age. The results presented show a decreasing metabolism with increasing beyond 50, becoming more marked as the years advance. Dr. Francis Benedict has recently stated in a paper on the basal heat production of elderly women that many more data are necessary before definite prediction standards can be established for old age. This study is, therefore, most timely.

Mottled enamel.---Before leaving the subject of nutrition, I would like to call your particular attention to the outstanding contribution of home economics research at the University of Arizona in the discovery, based on sound experimental proof, that mottled enamel, a disfiguring condition of the teeth endemic in certain sections of the country, is due to the presence of excess fluorides in the drinking water of the affected communities. This is surely a discovery of importance, for knowledge of the causative agent is the first step toward eliminating the trouble. To quote from Arizona Station Technical Bulletin 43:

"Elimination of this distressing and disfiguring tooth defect is a matter of prevention which can at this time be accomplished only by a change in the water supply of the afflicted communities to one which does not contain toxic concentrations of fluorides. Unfortunately this is not easily possible in every section and a great economic problem is involved. Methods of treatment of public water supplies for the removal of toxic concentrations of fluorides are now being investigated in this laboratory."

The Farm Family's Food.

Of particular interest to the farm home maker are the quality and nutritive value of foods produced on the farm or purchasable at low cost and anything that she can learn on these points and also on methods of cooking

both home-grown and purchased foods to yield the most appetizing and nutritious products will be a contribution to the betterment of rural living.

Vitamin content.--The vitamin content studies carried on as a part of the home economics research program in several States are furnishing information which will be of help to the home maker in the selection of inexpensive sources of vitamins. Sweetpotatoes of the Prolific variety were found in studies at Iowa State College to be very rich in vitamin A and were recommended as an excellent means of increasing the vitamin A content of the diet. Another item recommended from the same laboratories as an important source of vitamin A is canned tomatoes, one serving of which, $3/4$ cup, was found to contain nearly three times as much vitamin A as one serving (1 tablespoon) of butter. No loss in vitamin A potency could be detected in canned tomatoes (in tin) for at least three years.

From Tennessee and Missouri have come brief progress reports to the effect that the Nancy Hall sweetpotato is likewise rich in vitamin A. Other varieties are now being studied at Tennessee to determine which are to be recommended as the best source of vitamin A.

The home economics department at North Dakota Agricultural College is cooperating with the horticulture department of the station in promoting a new variety of winter squash, the Buttercup, which is being recommended as a substitute winter source of vitamin A in northern localities where it is impossible to raise sweetpotatoes successfully. Preliminary studies have shown this variety of squash to be rich in vitamin A.

In the selection of canned corn, the home economics department of the University of Wisconsin recommends yellow corn such as Golden Bantam in place of white such as the White Crosby, for when samples of both varieties, harvested at the same stage of maturity and canned in the same way, were tested, the former was found to be a rich source of vitamin A and the latter to be entirely lacking in this vitamin. An ordinary serving of the canned Golden Bantam corn was calculated to contain about the same amount of vitamin A as an ordinary serving of butter.

With dried fruit considerably cheaper than fresh at certain seasons of the year, knowledge of the vitamin content of various types of dried fruit is important. Studies carried on in the household science department at the University of California have shown that apricots are one of the richest plant sources of vitamin A, even after such losses as may take place in drying. Apricots are not a particularly good source of vitamin C, but a sample of commercially stored and processed sulfured apricots tested after six months' storage contained about half of the vitamin C present in fresh fruit. Fresh figs were found to contain only a fair amount of vitamin A and very little vitamin C. Dried figs, sulfured and unsulfured, showed considerable loss of vitamin A and complete loss of vitamin C.

Factors affecting the flavor of orange juice.--In an extensive investigation at the Florida Station in which the home economics research department is taking an active part, it has been demonstrated that the bitter taste which often develops in citrus juices on standing is due to certain glucosides present in the inner peel, the veins, and the walls lining the sections of the fruit, and that the secret of preventing the introduction of these glucosides into the juice lies chiefly in the method of extracting the juice. This investigation gives promise of introducing better methods in the commercial extraction of orange juice for preservation by frozen storage. Florida Station Bulletin 243, describing the work to date, also affords some suggestions for the selection of the best type of orange juice extractors for home use.

The selection and cooking of potatoes.--The cooking qualities of potatoes is a topic which has received attention in the research program in a number of home economics departments. In a comparison extending over several years at the Rhode Island Station of the cooking qualities of Green Mountain, Irish Cobbler, and Rural Russet potatoes, the Green Mountain scored highest for color and the Rural Russet for flavor, with the Green Mountain ranking first and the Irish Cobbler second in mealiness. Using a penetrometer to determine doneness, investigators at the University of Maine found that with potatoes of different varieties but the same size and maturity, the Irish Cobbler cooked more quickly than the other varieties tested, including the Spaulding Rose, Bliss Triumph, Green Mountain, and Idaho Russet. A finding of practical interest was that in mature potatoes which have not been stored for any length of time, the bud ends cooked more quickly than the stem ends, thus suggesting the advisability of cutting large potatoes in halves transversely and cooking the stem ends longer than the bud ends. Studies at the University of Wyoming revealed no consistent differences in the cooking quality (as judged by penetrometer tests) of dry land and irrigated potatoes. The Irish Cobbler variety ranked higher in mealiness than the Bliss Triumph when first dug and after storage from early fall until late in June in a moist potato cellar. Information which such studies as these yield can be put to practical value in the purchase of potatoes for specific purposes, for, as explained in Cornell bulletin for home makers It Pays to Buy Food Wisely, some varieties of potatoes are satisfactory for all purposes, other, which are particularly dry and mealy, for baking, and still others like the waxy Bliss Triumph for spring and summer salads.

Cooperative meat investigations.--The published contributions of home economics departments during the year in this extensive cooperative undertaking carried on jointly by the experiment stations and the U. S. Department of Agriculture include methods developed at North Dakota for the surface burner roasting of less tender cuts of beef, together with a comparison of sheet iron and aluminum kettles for such cooking; further work at Missouri on the effect of oven temperature on tenderness, and other palatability factors of beef roasts and of broiling temperatures on cooking time, cooking losses, and palatability of steaks; and at Minnesota on the quality and losses in pork roasts cooked with and without searing.

The Clothing of the Farm Family.

One effect of the depression has been to increase the home production and decrease the purchase of clothing. This being the case, any contribution to the selection of textile fabrics from the standpoint of durability, fastness to light and laundering, and relation of price to quality is particularly timely.

Studies were reported during the year from Ohio on the relation of price to quality in various white cotton shirtings of plain and cord weave and on the influence of laundering and exposure to light upon wash silks used for outer garments. In the former the higher priced fabrics in both weaves were finer and lighter in weight than the lower priced but not necessarily any stronger. The breaking and bursting strengths of a 49-cent cambric were no greater than of a 29-cent cambric. A cord weave broadcloth was superior to a plain weave shirting fabric costing the same per yard, in having greater weight and thickness, a more even balanced yarn count, less shrinkage in the warp direction, and no shrinkage in the filling direction. The cord weave fabrics, however, showed less uniformity in strength than the plain weave,

a point of considerable importance in the consideration of wearing quality.

The silks covered a wide range in price and included pure dye, weighted, and wild silks, some of which were branded or guaranteed. Contrary to the results with cotton fabrics, price was found to be higher correlated with quality, since the higher priced silks, both pure dye and weighted, had higher bursting and breaking strengths as well as being heavier and thicker than the lower priced. The weighted silks were not as strong as the pure dye and, although showing some increase in strength on laundering, were weakened more on exposure to light than were the pure dye silks. Continued laundering and exposure to light caused fading to the same degree in pure and weighted silks of the same color. The pure dye branded silks showed no superiority in the various factors studied over the pure dye unbranded, but the one branded weighted silk was superior to the unbranded weighted silks. A progress report of an extensive investigation at the Texas Station of the effects of Texas sunlight on the durability and color of cotton fabrics stated that the so-called sunfast fabrics proved to be much more fast to sunlight than those not guaranteed.

The Rural Home and Its Equipment.

As an introduction to the review of progress in this phase of home economics research, I would like to quote the first paragraph of Miss Van Rensselaer's Introduction to Part I of Volume X of the Publications of The President's Conference on Home Building and Home Ownership.

"A home maker met a friend who congratulated her upon the purchase of a house by saying 'How splendid that you finally have bought a home.' She replied, 'Oh we have always had a home, but we now have a house to put it in.'"

Studies directed toward the improvement of the houses in which farm families make their homes are fulfilling the purpose of the Purnell Act in a very direct way. In this field home economists are being materially assisted by agricultural and electrical engineers, either through cooperative or independent projects. For this reason I have included in this section contributions from the agricultural engineering departments at two of the stations.

The housing of the farm family.--A report on the relation of housing to rural standards of living prepared by a home economics research worker at the University of Wisconsin for the Committee on Farm and Village Housing of The President's Conference on Home Building and Home Ownership called attention to various factors which her observations had shown to be of primary importance in determining the housing of the farm family. Prominent among these were the chance relation between the farm house and the family which is to occupy it and the competition for surplus cash available between improved housing facilities and increased farm investment. The first of these factors calls to mind the Maryland study on Farm Houses and Migration undertaken to determine if possible what are the chief causes of the migration of farm people, both owners and tenants, from farm to farm and from farm to city. While many of the factors are more or less intangible, the length of occupancy of houses by tenants seemed to be closely related--either as cause or effect--to the condition of the houses and improvement and equipment therein. Measured by length of tenancy, farm houses ranged high which had furnace heating, bathrooms, and electricity, and which were well-built and in good repair and very low those scoring poor in arrangement and crowded as to occupancy.

Migration from farm to farm, as noted in the Maryland study, might be lessened if more conscious thought were given to the housing requirements of the farm family instead of making the farm house the last item to be considered in determining the choice of a farm. In periods of depression, such as the present, there is very little surplus cash available for investment either in improved housing facilities or farm buildings or equipment. Much, however, can be done with comparatively little outlay to make farm houses more convenient and better suited to the particular requirements of rural as contrasted with urban families.

The farm kitchen and its equipment.--A major problem in the housing of rural families is the planning of the kitchen and arrangement of its equipment. A practical contribution of the year in this field is Bulletin 276 of the Arkansas Station on Studies in the Design of Kitchens and Kitchen Equipment. This bulletin, which is the contribution of D. G. Carter of the department of agricultural engineering, contains specifications and working plans for standard kitchen storage equipment simple in construction and inexpensive to build. It is said that if inexpensive materials such as fiber board are used where possible the complete construction cost of these standard storage units should not be more than half the cost of the conventional type of cabinet work.

The arrangement of kitchen storage units and of working equipment is far from ideal in many rural homes. Studies are being carried on at the Indiana, North Dakota, and Vermont Stations to determine the most efficient arrangement of kitchens to conserve the home maker's time and energy and it is to be hoped that by another year reports on these studies will be published. At the State College of Washington, the human energy cost of household tasks carried on in different ways is being determined by indirect calorimetry with a Benedict knapsack apparatus. A summary of the studies on peeling potatoes showed that sitting uncomfortably on a high stool failed to save energy for any of the subjects as compared with standing or sitting on a chair. A small but definite saving in energy was effected by sitting comfortably on a chair as compared with standing. Similar methods were used at North Dakota Agricultural College to find the influence of work surfaces at different heights on the energy cost for different tasks, also with the conclusion that less energy is used in many tasks sitting comfortably on a chair than in standing or sitting on a stool.

A comprehensive program in household engineering is being developed in the agricultural engineering department at the Virginia Station by P. B. Potter. An investigation of the accuracy of regulators of various electric ranges on the market and of the degree of accuracy necessary in temperature control in baking resulted in the important discovery that the range of variation between the actual temperature, as determined by careful measurements with thermocouples and pyrometer, and the recorded temperature of the oven regulator was in many instances greater than the margin of safety for baking certain products. These findings point to the importance of devising more accurate and reliable oven regulators.

In connection with a project on home laundering, the problem of the high cost of heating water by electricity was attacked by carrying on extensive tests with a 2,000 watt side-arm heater attached to an ordinary 30-gallon fire range boiler tank such as is in use in many homes. It was found that this outfit will heat water satisfactorily for household requirements, although not with the efficiency of the complete units on the market. It

was demonstrated, moreover, that fully 50 per cent of the energy cost of the ordinary operation of such a unit can be saved by proper insulation. Expressed in figures, a ready made asbestos or felt product costing from \$5 to \$7 in a mail order house would pay for itself four times over in a year. A thermostat is considered highly important for service and economy.

The Standards of Living of Farm Families.

Little by little information is being accumulated on the content of family living in rural homes. Home economics contributions on this subject during the year under review include bulletins from Minnesota, Mississippi, Montana, and Vermont Stations and I have included in the list of references a bulletin on the same subject contributed by the agricultural economics department of the Utah station.

The relationship of the farm home and the farm business.--The Minnesota bulletin on the relationship of the farm home to the farm business is unique in that the report is based upon information secured in 1920-1924 from farm management records taken without special regard to home management. The records were sufficiently detailed, however, to afford information on (1) the farm produce used by the farm family, (2) the labor contribution of the family to the farm and of the farmer to the household, and (3) the income available for family living. The data obtained on the second point, the contributions of the family to the farm and the farmer to the home, are of particular interest at this time. The items considered under the head of the contributions of the family to the farm were cleaning dairy utensils, other dairy work, poultry, other livestock, and any other farm work; and the contributions of the farmer to the home furnishing fuel, hauling groceries and supplies from town and other miscellaneous work. In calculating the time spent by the family on farm tasks, due recognition was made of the presumably lower output of women and children by reducing the time to a man equivalent basis. Even on this basis, the total number of man-equivalent hours of work per farm contributed by the women and boys and girls under 19 years of age amounted to about 3.5 hours a day, or 14.5 per cent of the total time spent in farm work, while the time contributed by the farmer and hired help to activities directly concerned with the interests of the family amounted to only a little over one-half hour a day.

Gainful occupations of rural women.--With the farm business flourishing, there may be some excuse for the farmer and his help accepting assistance from the home maker and younger members of the family rather than giving assistance in household tasks. I am wondering if the reverse is true in situations such as have been found in the Rhode Island study of gainful occupations of rural home makers. The timeliness of this topic led me to secure some advance notes which I am going to pass on to you as an exception to my decision to report at this time only published results. This study has shown that the business depression has produced only slight effects on the possibilities of earning among women of the State, many of whom are providing the only cash income of the family. Information summarized for this report concerning the amount of assistance these wage earning home makers were having in their customary household duties through labor saving equipment, substitute services, and help, paid or unpaid, includes among others the following items: As regards labor saving equipment, 83.1 per cent had electric lights, 79 per cent electric irons, 32 per cent power washing machines, 36 per cent power vacuum cleaners, and 7 per cent electric refriger-

ators. Coal, wood, and kerosene were the chief fuels for cooking and stoves the chief form of heating. Water had to be carried in 23 per cent of the homes. Four per cent of the women reported that they bought no clothing and 25 per cent not more than one-tenth of the clothing used by the entire family. In 67 per cent of the families all of the washing was done at home. Bread baking was done in 51 per cent of the homes. The families varied in size from one member to 11 and the houses from one to 30 rooms each. With this picture of the homes and the activities carried on in them, it is somewhat appalling to note that only 2.5 per cent of the women reported full time paid help, 9 per cent part time paid help, and 40 per cent unpaid help from children or members of the household.

Food supplied by the farm for home consumption.--The extent to which farm produce is used by the farm family is of particular interest at this time, as noted in the Monday morning discussion. The Utah, Montana, and Vermont standards of living bulletins cover the periods 1929-30, 1927-30, and 1930, respectively. In the Utah study the money value of food furnished by the farm was calculated at farm prices and in the other two at prevalent retail prices. In the Utah study 51 per cent of the total food cost was supplied by the farm, in the Montana 64 per cent, and in the Vermont study 54 per cent. A recent mimeographed summary from Illinois of 201 farm and small town home account records for a 12-month period in 1931-32 shows that 65 per cent of the food cost was furnished by the farm. In regard to this, the following comment was made: "In farm families of 4 persons purchased food totaled \$195 for the year, or only 35 per cent of their total food in comparison with 40 per cent last year. This shows the result of adequate gardens and increased amount of canning and general 'live at home' policy."

Comparisons of findings relative to the other factors which make up the content of living of rural families would be equally interesting if time and space permitted. It is only through the accumulation and interpretation of such studies as these that standards of living for rural families can be established.

I have by no means covered the entire field of published reports of the year, but I hope that the illustrations I have selected will serve to show that the purpose of the Purnell Act has been kept in mind in the selection of home economics research projects in Land-Grant institutions throughout the country. To those who are responsible in an administrative capacity for the home economics research in your institution, I would recommend at this time of economic stress more insistence than ever before on the prompt completion and publication of results of research in progress and even more attention in the planning of future projects to the purpose of the Purnell Act in providing funds for such research as shall lead to the improvement of the rural home and rural life.